

Work Order ID 92550

\*92550\*

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October-31-12 1:42:33 PM

Item ID: D6101-001 Accept \*N900040100\* Setup Start \*NS1\*  
 Revision ID: Stop \*NS2\*  
 Item Name: Saddle Billet  
 Start Date: 10/31/12 Start Qty: 40.00 \*40\* Cust Item ID:  
 Required Date: 11/30/12 Req'd Qty: 40.00 \*40\* Customer:  
 Reference:

Approvals: Process Plan: MLS Date: 12-11-01 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start \*NR1\*  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6101	Rev B								

100 PURCHASING 0.00  
 \*100\* Purchasing Memo 0.00  
 Purchasing Issue P/O: 18309  
 a) Description: Aluminum billet  
 b) 6.00" x 6.250" x 2.00" thick  
 c) Tolerance on length are +0.030"/-0.000" AE +/- 0.008"  
 d) Grain direction along 6.00" length  
 e) Material: 7075-T7351 (QQ-A-250/12)  
 f) Material certification required

CZ 12/11/01 40

-110 Receive & Inspect for Damage & Mat'l Certs 0.00  
 \*110\* Packaging Memo 0.00  
 Packaging Ensure material certification is attached

12/11/01 (40)

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
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Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

**FAULT CATEGORY**

Landing Gear	General	Other
<input type="checkbox"/> Bending	<input type="checkbox"/> Bend	<input type="checkbox"/> Grain
<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Hardware
<input type="checkbox"/> Cracks	<input type="checkbox"/> Broken/Damaged	<input type="checkbox"/> Inspection Incomplete
<input type="checkbox"/> Crushed/Crimped	<input type="checkbox"/> Burrs	<input type="checkbox"/> Instructions Incomplete/Unclear
<input type="checkbox"/> Cuffs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Maintenance
<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Countersink	<input type="checkbox"/> Mislabeled
<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Misread
<input type="checkbox"/> Ripples in Bend	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Offset
<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Drawing	<input type="checkbox"/> Out of Calibration
<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Sequence
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Folio	<input type="checkbox"/> Outside Dimensions
		<input type="checkbox"/> Ovalized
		<input type="checkbox"/> Over/Under tolerance
		<input type="checkbox"/> Part Incorrect
		<input type="checkbox"/> Part Lost/Missing
		<input type="checkbox"/> Part Moved
		<input type="checkbox"/> Positioned Wrong
		<input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced
		<input type="checkbox"/> Temperature/Cure
		<input type="checkbox"/> Weld
		<input type="checkbox"/> Wrong Stock Pulled
		<input type="checkbox"/> Other

# Work Order ID 92550

**\*92550\***

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Item ID: D6101-001 Accept **\*N900040100\*** Setup Start **\*NS1\***  
 Revision ID: Stop **\*NS2\***  
 Item Name: Saddle Billet  
 Start Date: 10/31/12 Start Qty: 40.00 **\*40\*** Cust Item ID:  
 Required Date: 11/30/12 Req'd Qty: 40.00 **\*40\*** Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 <b>*120*</b> QC Quality Control	QC6- Inspect dimensions to drawing  Memo Ensure Material certification comply to Dwg D	0.00 0.00		<i>OK 12/11/16</i>		<u>40</u>	<u>0</u>		<i>DAS</i> <b>14</b> <i>12-11-15</i>
130 <b>*130*</b> Packaging Packaging	Identify as per dwg & Stock Location: <i>MAT 45</i>  Memo	0.00 0.00		<i>FK 12/11/16</i>		<u>40</u>	<u>0</u>		
140 <b>*140*</b> QC Quality Control	QC21- Final Inspection - Work Order Release  Memo	0.00 0.00							<i>12/11/19</i> <i>ME</i> <i>12-11-15</i>

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">Skid-tube <input type="checkbox"/></td> <td style="width: 25%;">Crosstube <input type="checkbox"/></td> <td style="width: 25%;">Water Jet <input type="checkbox"/></td> <td style="width: 25%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
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Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
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Equip/Tooling <input type="checkbox"/>									
Operator <input type="checkbox"/>									
Material <input type="checkbox"/>									
Setup <input type="checkbox"/>									
Other <input type="checkbox"/>									
Process <input type="checkbox"/>									
Supplier <input type="checkbox"/>									
Training <input type="checkbox"/>									
Unapproved <input type="checkbox"/>									

**FAULT CATEGORY**

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		<input type="checkbox"/> Wrong Stock Pulled
		<input type="checkbox"/> Other

# Picklist Print

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Page 1

Work Order ID: 92550

Parent Item: D6101-001

Parent Item Name: Saddle Billet

Start Date: 10/31/12

Required Date: 11/30/12

Start Qty: 40.00

Required Qty: 40.00

Comments: IPP B: 01.05.04New IssueEC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-001P 7075-T7351 2X6X6.25		Purchased	No			110	Each	0.0000	1	40		10/31/12	(40)

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

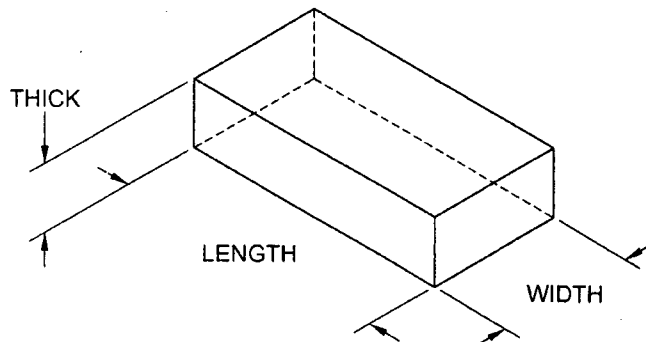
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**FAULT CATEGORY**

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		<input type="checkbox"/> Temperature/Cure
		<input type="checkbox"/> Weld
		<input type="checkbox"/> Wrong Stock Pulled
		<input type="checkbox"/> Other

# SPECIFICATION CONTROL DRAWING



PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

**B** ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length

**RELEASED**  
09/07/15/WJ

SHOP COPY  
 RETURN TO  
 ENGINEERING  
 UNCONTROLLED  
 SUBJECT TO AMENDMENT  
 WITHOUT NOTICE  
 WORK ORDER NO. 92550 MJS  
 12-11-01

B	ADDED D6101-015/-017, ADD ASTM B209	RF	09.04.23
A	NEW ISSUE	CP	01.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	CP	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D6101	SHEET 1 OF 1
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	SADDLE BILLET, 7075	NTS
DATE	09.04.23	COPYRIGHT © 2001 BY DART AEROSPACE LTD <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

**Castle Metals®**

A. M. Castle &amp; Co.

**COPIE****BORDEREAU DE MARCHANDISES**

Page 1 of 2

No de Formulaire d'Emballage / Shipment No:1541462

<b>Expédié de / Ship From:</b> A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		<b>Vendu à / Sold To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		<b>Expédié à / Ship To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		<b>Livré à / Deliver To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
<b>Date d'expédition / Date Shipped</b> 14-NOV-2012	<b>F.O.B.</b> ORIGIN	<b>Modalités de transport / Freight Terms</b> Prepaid	<b>Transporteur / Carrier</b> MANITOULIN		<b>No du Bon de connaissance / BOL No</b> 1541462-2		

<b>Détails d'expédition / Shipment Details</b>	<b>Destination finale / Final Destination Branch - MON</b>
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<b>N° de commande / Order No</b> 2520263	<b>N° de ligne / Line No</b> 1	<b>N° d'article / Item No</b> 752237.MO	<b>Description</b> 2.0000.PL.7075.T7351.ALUMINUM.US1.48.5000.144.5000 CUT RECTANGLE TO 6.25 IN ( ) X 6 IN ( ) SPECIFICATIONS: QQ-A-250-2 SHIP AS SOON AS POSSIBLE	
<b>N° de bon de commande / Purchase Order No</b> 18309	<b>Nbre de pièces / Part Number</b> YOUR ITEM NUMBER: D6101-001		<b>Qté commandée / Ordered Qty</b> 40.00 PCS	<b>Qté Facturée / Invoice Qty</b> 40.00 PCS
<b>Détails / Details</b> QQ-A-250/12 SHIP AS SOON AS POSSIBLE				

<b>N° de livraison / Delivery No :</b> 118148097	<b>Usine / Mill</b> MATERIALS TECHNOLOG Y SOLUTIONS	<b>No de coulée / Heat Number</b> 605568A5	<b>Code méc / Mech Id</b>	<b>Pièce s / PCS</b> 40	<b>Largeur (Pouce) / Width (IN)</b>	<b>Longueur (Pouce) / Length (IN)</b>	<b>Qté expédiée / Shipped Qty(LBS)</b> 309.6638
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Ces marchandises/technologies sont sujettes aux règlements de l'Export Administration et du département d'état des Etats-Unis. Si elles ont été/sont exportées, elles doivent se conformer à ces règlements. Toute modification du contrat de transport contraire aux lois des États-Unis est interdite.  
These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.  
Nous certifions par la présente que le matériel couvert par cette certification est conforme aux spécifications susmentionnées et aux exigences applicables pour le matériel, y compris toute spécification faisant partie de la description. Les rapports d'

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law prohibited.

Date Printed: 14-NOV-2012 12:17:09 PM



Item 752237.20 Po 17265 2 pages

SHIP TO: HADCO METAL TRADING CO. LLC 2811 CHARTER RD PHILADELPHIA, PA 19154		<b>KAISER ALUMINUM</b> Trentwood Works - Spokane, WA 99216 Phone: (800) 367-2586 <b>CERTIFIED TEST REPORT</b> Serial Number 4276282		
SOLD TO: HADCO METAL TRADING CO. LLC 2811 CHARTER RD PHILADELPHIA, PA 19154				
CUSTOMER PO NUMBER: 035929	WORK PACKAGE:	CUSTOMER PART NUMBER:	SHIP UNLOAD: 102420/22	GOV'T CONTRACT NUMBER:
KAREN ORDER NO: 1138384	LINE ITEM: 8	SHIP DATE: 10-SEP-2012	ALLOY: 7075	BLAD: BARE
TEMPER: T7351	PRODUCT DESCRIPTION: Sawed Plate			
WEIGHT SHIPPED: 5324 LB	QUANTITY: 3 PCS EBY.	TRUCK SLS: 2038761	GAUGE: 2.0000 IN (50.800 MM)	DIAMETER/WIDTH: 60.500 IN (1538.7 MM)
		LENGTH: 144.500 IN (3670.3 MM)		

MHU 1618538: LOT 80550000 2 pieces:  
MHU 1618539: LOT 80550000 1 piece:

## Certified Specifications

AMS 4078/RevJ  
ASTM B 209/Rev10  
BSS 7036/RevA  
DPS 4.713/RevAH  
MMS 169/RevT

AMS-QQ-A-250/12  
ASTM B 594/RevD8  
CMMP 026/RevU  
GAMPS 3101/RevB  
PPS 20.04/Rev7

AMS-STD-2184/Rev98  
BAC 5438/RevH  
CSTI 008/RevD  
GSS16100/RevG/Amd1  
PS 21211/RevL

Test Code: 4297

## Test Results

Lot: 805568A5 Cast 487

Drop 07

Ingot 3

Melted in USA

(ASTM E8/B567)

(EN 2002-1)

Tensile:	Temper:	Dir / 2 Tests	Ultimate KSI (MPa)	Yield KSI (MPa)	Elongation %
	T7351	L1 / 2 (Min:Max)	69.3 : 70.2 (478 : 484)	67.0 : 68.0 (393 : 407)	11.5 : 11.9

(ASTM E1004)

(EN 2004-1)

Conductivity % IACS:	41.0 Min	41.2 Max
EMS/M:	23.8 Min	23.9 Max

(ASTM E1251)

Chemistry:	SI	PC	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual(wt%)	0.05	0.12	0.4	0.02	2.4	0.20	5.6	0.03	0.01	0.01	TOT 0.05

14  
DAS  
OK 12/1/16

1000

1000

1000

**KAISER  
ALUMINUM**Trentwood Works - Spokane, WA 99216  
Phone: (800) 367-2686**CERTIFIED TEST REPORT**Serial Number  
4275282**ALLOY LIMITS**

7075	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
MIN(wt%)	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.06
MAX(wt%)	0.40	0.50	2.0	0.30	2.9	0.28	8.1	0.20	0.06	0.06	TOT	0.18

Aluminum Remainder

**TEST NOTES**

Metal represented by this test report was 100% immersion  
ultrasonically tested from one side with 3mm dead zones top  
and bottom and meets the Class A and Class B requirements of  
all specifications referenced on this test report. No  
surface marking of sonic indications is performed.

**Castle Metals Map**

HEAT NUMBER 60556845  
MECHANICAL ID \_\_\_\_\_  
ITEM CODE 952237-80  
LOT NUMBER \_\_\_\_\_  
PO NUMBER 17265  
RECEIPT DATE 11-13-12  
SUPPLIER MTL  
SPECIFICATION AMS-QQ-A-250/12  
LOS \_\_\_\_\_  
COMMENT \_\_\_\_\_  
APPROVED 9

**CERTIFICATION**

Kaiser Aluminum Fabricated Products, LLC (Kaiser) hereby certifies that metal shipped under this order was melted in the United States of America at a qualifying source per  
AMS 272-272-272, was manufactured in the United States of America, and meets the requirements of AMS 272-272 for domestic content. The material has been inspected,  
tested and found to conform with the requirements of the applicable specifications as indicated herein. The material does not contain any hazardous substances,  
mechanical properties are as shown herein, and chemical composition meets specification requirements. All metal which is shipped from Kaiser Aluminum Fabricated Products, LLC  
is warranted to meet the above specifications and conditions of sale. Test reports are on file, subject to examination. Test reports shall not be  
reproduced except in full, without the prior approval of Kaiser Aluminum Fabricated Products, LLC. The recording of false, fictitious or misleading statements  
or omissions on this certificate may be punished as a felony under Federal law. 182-8061-2000 certifies.

*James Hemmenway*  
JAMES HEMMENWAY

JAMES HEMMENWAY, LABORATORIES SUPERVISOR